

INTERAGENCY ANNEX NO. 2
BETWEEN
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AND
FEDERAL AVIATION ADMINISTRATION
UNDER
INTERAGENCY UMBRELLA AGREEMENT NO. 354219
FOR
SUSTAINABLE AND SCALABLE ADVANCED AIR MOBILITY (AAM)
OPERATIONS

ARTICLE 1. PURPOSE

The National Aeronautics and Space Administration (NASA) Aeronautics Research Mission Directorate (ARMD) plans to conduct research to support sustainable and scalable Advanced Air Mobility (AAM) operations by defining the relationship between AAM noise and annoyance to help the FAA and industry understand and measure community response.

NASA and the FAA intend to collaborate throughout many stages in preparation for AAM community response testing. The fundamental knowledge, data, and tools developed will help inform the FAA for development of appropriate procedures to enable AAM community response testing.

The legal authority for this Annex, consistent with the Umbrella Agreement, is in accordance with the Space Act, Other Transactions Authority (OTA), 51 U.S.C. § 20113(e).

ARTICLE 2. RESPONSIBILITIES

A. NASA LaRC will use reasonable efforts to:

1. Develop methodologies for calculating the cumulative noise of fleet operations for AAM vehicles and recommend best practices for modeling with Aviation Environmental Design Tool (AEDT) or other conceptual models.
2. Perform laboratory studies on single-event metrics that characterize AAM noise annoyance.
3. Jointly with the FAA, collect flight acoustic measurements for AAM and rotary wing vehicles to inform vehicle models, regulations, and environmental reviews.
4. Jointly with the FAA, define research path leading to community response testing.
5. Structure the collection of data relevant to AAM noise and annoyance such that the data can be shared with the FAA.
6. Participate in International Civil Aviation Organization (ICAO) workshops, meetings, and events as requested by the FAA.
7. Participate in ASCENT research as requested by the FAA.

B. FAA will use reasonable efforts to:

1. Using non-standard AEDT modeling techniques assess cumulative AAM fleet noise; relying on existing AEDT code with performance and noise data provided by NASA.
2. Assess requirements and scope a plan to incorporate AAM performance and noise data into AEDT as a standard modeling capability.
3. Review supplemental noise metrics applicable to AAM vehicles as recommended by NASA.
4. Jointly with NASA, define a research path leading to community response testing.
5. Jointly with NASA, collect flight acoustic measurements for AAM and rotary wing vehicles to inform vehicle models, regulations, and environmental reviews.
6. Share results from FAA-sponsored research on the potential impacts of noise on sleep and cardiovascular health where possible.
7. Structure the collection of data relevant to AAM noise and annoyance such that the data can be shared with NASA.
8. Share results from relevant ASCENT tasks where possible.

ARTICLE 3. SCHEDULE AND MILESTONES

The planned major milestones for the activities in the Annex defined in the "Responsibilities" Article are as follows:

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| 1. NASA and FAA develop joint high-level AAM community response research plan and present plans to UAM Noise Working Group (UNWG). (Completion Date) | April 2022 |
| 2. NASA and FAA review results of the cooperative AAM noise Phase 1 study for human response and present findings to UNWG. (Completion Date) | April 2023 |
| 3. NASA and FAA review results of the cooperative AAM noise Phase 2 study for human response and present findings to UNWG. (Completion Date) | June 2024 |
| 4. NASA and FAA complete joint data collection from AAM and rotary wing flight tests. (Completion Date) | March 2025 |
| 5. NASA and FAA begin developing detailed plan for community response tests (Start date) | December 2025 |

ARTICLE 4. FINANCIAL OBLIGATIONS

There will be no transfer of funds between the Parties under this Agreement and each Party will fund its own participation. All activities under or pursuant to this Agreement are subject to the availability of funds, and no provision of this Agreement shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act (31 U.S.C. § 1341).

ARTICLE 5. INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS - IDENTIFIED INTELLECTUAL PROPERTY

A. Under paragraph C of the Intellectual Property Rights - Data Rights - Handling of Data Article of the Umbrella Agreement, Disclosing Party provides the following Data to Receiving Party. The lists below may not be comprehensive, are subject to change, and do not supersede any restrictive notice on the Data.

1. Third Party Proprietary Data: *The Disclosing Party's Third Party Proprietary Data, if any, will be identified in a separate technical document.*
2. Controlled Government Data: *The Disclosing Party's Controlled Government Data, if any, will be identified in a separate technical document.*
3. The following software and related Data will be provided to Partner under a separate Software Usage Agreement: *None.*

ARTICLE 6. TERM OF ANNEX

This Annex becomes effective upon the date of the last signature below ("Effective Date") and shall remain in effect until the completion of all obligations of both Parties hereto, or January 4, 2026, whichever comes first, unless such term exceeds the duration of the Umbrella IAA. The term of this Annex shall not exceed the term of the Umbrella IAA. The Annex shall automatically expire upon the expiration of the Umbrella IAA.

ARTICLE 7. RIGHT TO TERMINATE

Either Party may unilaterally terminate this Annex by providing thirty (30) calendar days written notice to the other Party.

ARTICLE 8. POINTS OF CONTACT

The following personnel are designated as the Points of Contact between the Parties in the performance of this Annex.

Management Points of Contact

NASA Langley Research Center

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Revolutionary Vertical Lift Technology
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donald.scata@faa.gov

ARTICLE 9. MODIFICATIONS

Any modification to this Annex shall be executed, in writing, and signed by an authorized representative of NASA and the FAA. Modification of an Annex does not modify the terms of the Umbrella Agreement.

ARTICLE 10. SIGNATORY AUTHORITY

Approved and authorized on behalf of each Party by:

NATIONAL AERONAUTICS AND
SPACE ADMINISTRATION
LANGLEY RESEARCH CENTER

FEDERAL AVIATION
ADMINISTRATION

BY: _____
Mary DiJoseph
Director, Aeronautics Research
Directorate

BY: KEVIN W. WELSH Digitally signed by KEVIN W.
WELSH
Date: 2021.12.02 18:18:08 -05'00'
Kevin Welsh
Executive Director, Office of
Environment and Energy

DATE: _____

DATE: _____